NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Asheville Regional Office
County: Burke
NC Facility ID: 1200094
Inspector's Name: Patrick Ballard
Date of Last Inspection: 02/14/2018
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Molded Fiberglass Companies North Carolina

Facility Address:
Molded Fiberglass Companies North Carolina
213 Reep Drive
Morganton, NC 28655

SIC: 3089 / Plastics Products, Nec
NAICS: 326199 / All Other Plastics Product Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 02D .0503, .0515, .0516, .0521, .1109, .1111, and .1806
NSPS:
NESHAP: 40 CFR 63 PPPP, WWWW, DDDDD
PSD: NA
PSD Avoidance: 02Q .0317
NC Toxics: NA
112(r): NA
Other: NA

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Jim Gulnac HSE Manager (828) 584-4974, ext. 607 213 Reep Drive Morganton, NC 28655 jgulnac@mfgnc.com	Allen Finchum Plant Manager (828) 584-4974, ext. 610 213 Reep Drive Morganton, NC 28655 afinchum@mfgnc.com	Jim Gulnac HSE Director (828) 584-4974, ext. 607 213 Reep Drive Morganton, NC 28655 jgulnac@mfgnc.com

Application Data

Application Number: 1200094.18A, .18B
Date Received: 03/09/2018
Application Type: Renewal/Modification
Application Schedule: TV-Minor

Existing Permit Data
Existing Permit Number: 06218/T17
Existing Permit Issue Date: 10/14/2015
Existing Permit Expiration Date: 10/31/2018

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2016	0.0100	2.24	14.81	1.88	0.0300	8.90	8.43 [Styrene]
2015	0.0200	2.52	28.26	2.11	0.2100	14.59	13.57 [Styrene]
2014	0.0100	2.44	27.79	2.05	0.4200	16.46	15.92 [Styrene]
2013	0.0100	2.31	40.12	1.94	0.4200	15.66	15.24 [Styrene]
2012	0.0100	2.23	39.98	1.87	0.4230	14.56	14.05 [Styrene]

Review Engineer: Eric Crump

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 06218/T18
Permit Issue Date:
Permit Expiration Date:

1. Introduction/Purpose of Application:

Molded Fiberglass Companies North Carolina (MFG) currently holds permit number 06218/T17 with an expiration date of October 31, 2018 for a plant in Morganton, Burke County, North Carolina that manufactures and paints fiberglass reinforced plastic components.

On March 7, 2018, MFG submitted a Title V permit renewal application for permit no. 06218T17. Because the application was not submitted at least nine months before the permit expiration date of October 31, 2018, the facility will be out of compliance if it operates after October 31, 2018, unless a new permit is issued before that date.

MFG submitted a minor permit modification application March 6, 2018, and a subsequent addendum to the modification application on March 12, 2018. The minor modification includes the following items:

- Replacement of an existing 5.1 million British thermal units per hour (MMBTU/hr) natural gas fired boiler (ID No. ESB2) with a new 8.26 MMBTU/hr natural gas fired boiler (ID No. ESB3) with economizer.
- Installation of a 1000-ton compression molding press. This press would be in lieu of a 2850-ton press listed in the current permit (ID No. 14, ES1C-10) which had never been installed.
- Installation of a 1.0 MMBTU/hr curing oven (ID No. I-Curing oven), which will be added to the touchup booth (ID No. ES3).

2. Facility Description

Most of the fiberglass parts molded in this facility are truck hoods and sleeper cabs for tractor-trailer trucks. The fiberglass parts are molded, the pieces are placed in jigs and glued together, and then the cabs are touched up with primer.

Closed and compression fiberglass reinforced plastic molding operations at the facility are conducted using the following units:

- Press 11 – one 2,850-ton compression molding press (ID No. ES1C-01)
- Press 9 – one 1,000-ton compression molding press (ID No. ES1C-02)
- Press 12 – one 2,875-ton compression molding press (ID No. ES1C-08)
- Press 13 – one 3,000-ton compression molding press (ID No. ES1C-09)

The facility is permitted for an additional 2,850-ton compression molding press (Press 14, ID No. ES1C-10) that has not been installed.

While the facility is permitted for an open fiberglass reinforced plastic molding operation (ID No. ES1A) and a dry-filter type gel coat spray booth gel coat (ID No. ES4), both of these sources have been removed and are no longer in operation. The molding area of the plant also contains a closed molding mixing process where liquid resin batches are prepared (ID No. ES1D). Emissions from the mixing process are vented to a fabric filter (CD1).

In the assembly and painting area of the facility, coating and painting operations consist of two dry filter type paint spray booths (ID Nos. ES3 and ES5-02), and an electric infrared curing oven (ES5-04). Adhesive application (ID No. ES9) occurs throughout the facility. A sanding/trimming unit (ID No. ES6)

vents to a cyclone in series with a cartridge filter (ID No. CD6). Another unit controlling automatic drilling, routing, trimming, and sanding operations in the compression molding area of the plant (ID No. ES8) vents to a cyclone in series with a cartridge filter (ID No. CD8).

The facility operates one natural gas-fired boiler at 3.35 MBTU maximum heat input rate, and another natural gas-fired boiler at 5.10 million Btu per hour maximum heat input rate (ID Nos. ESB1 and ESB2, respectively).

3. History/Background/Application Chronology

October 14, 2015	Air Quality Permit No. 06218Tl7 issued to MFG.
March 17, 2016	Facility compliance inspection conducted by Patrick Ballard, Asheville Regional Office (ARO).
March 20, 2016	Notice of Deficiency (NOD) issued to MFG for not conducting or recording visible emissions observations from spray booths (ID Nos. ES3 and ES5-02) since approximately the fall of 2015.
March 30, 2017	Facility compliance inspection conducted by Patrick Ballard, ARO.
April 21, 2017	Notice of Violation (NOV) issued to MFG for late submittal of the Title V Annual Compliance Certification.
February 14, 2018	Facility compliance inspection conducted by Patrick Ballard, ARO.
March 6, 2018	Application 1200094.18A received for minor modification to permit.
March 6, 2018	Application 1200094.18B received for permit renewal
March 23, 2018	Letter acknowledging receipt of permit application sent to MFG.

4. Permit Modification/Changes and Title V Equipment Editor (TVEE) Discussion

The following table describes the changes to the permit resulting from the renewal/modification.

Table 1 – Summary of Changes				
Previous Permit		**New Permit**		**Description of Changes**
Page No.	**Section**	**Page No.**	**Section**	
Cover and throughout	--	Cover and throughout	--	Updated all dates and permit revision numbers.
--	Insignificant Activities List	--	Insignificant Activities List	Added curing oven for touchup booth.
3	1	3	1	Changed Press 14 (ID No. ES1C-10) from a 2,850-ton to a 1000-ton compression molding press
4	1	4	1	• Added Source ID No. ESB3, "one natural gas-fired boiler", which will replace source ID No. ESB2 • Added requirement for boilers to comply with MACT DDDDD
5	2.1.A	5	2.1	Removed 15A NCAC 02D .0958: Work Practices for Sources of Volatile Organic Compounds
7	2.1.B	7	2.1.B	• Removed 15A NCAC 02D .0958: Work Practices for Sources of Volatile Organic Compounds • Changed Press 14 (ID No. ES1C-10) from a 2,850-ton to a 1000-ton compression molding press
20	2.1.E	21	2.1.E	• Added Source ID No. ESB3, "one natural gas-fired boiler" • Added 15A NCAC 02D .1110 *[40 CFR 63 Subpart DDDDD]* to summary table
20-21	2.1.E.1, 2. and 3	21-23	2.1.E.1, 2. and 3.	Added Source ID No. ESB3 to particulates, sulfur dioxide, and visible emissions requirement
21	2.1.E.4.a	23	2.1.E.4.a	Removed initial compliance date for case-by-case MACT for boilers (Source ID Nos. ESB1 and ESB2)
--	--	23-26	2.2 E.5	Added 15A NCAC 02D .1111: MACT *[40 CFR 63, Subpart DDDDD]* as new requirement for boilers (Source ID Nos. ESB1 and ESB3)
22	2.2.A	27	2.2.A	Changed Press 14 (ID No. ES1C-10) from a 2,850-ton to a 1000-ton compression molding press
26, 28-29	2.2	31-33	2.2	Removed 15A NCAC 02D .0958: Work Practices for Sources of Volatile Organic Compounds
		34-43	3	Updated General Conditions to Version 5.2

The following changes were made to the Title V Equipment Editor (TVEE):

- Changed Press 14 (ID No. ES1C-10) from a 2,850-ton compression molding press to a 1000-ton compression molding press.
- Added curing oven (ID No. I-Curing oven) for touchup booth as an insignificant activity.
- Removed one 5.1 MMBTU/hr natural gas-fired boiler (ID No. ESB2).
- Added an 8.26 MMBTU/hr natural gas-fired boiler (ID No. ESB3).

5. Description of Project and Projected Emissions

In their minor permit modification application, MFG proposes to replace an existing 5.1 MMBTU/hr natural gas fired boiler (ID No. ESB2) with a new 8.26 MMBTU/hr natural gas fired boiler (ID No. ESB3) with economizer.

Boiler emissions were determined using the following equation:

Emissions (ton/yr) = Annual natural gas throughput (SCF) * MMBtu Energy per SCF of natural gas * Emissions factor (lb per MMBtu) * Conversion factor (1 ton/2000 lb)

Using 44.82 million SCF as the annual gas throughput for the boiler, 70.94 million SCF as the maximum potential annual gas throughput, and 1,020 Btu per SCF as the annual average heating value of natural gas, the following boiler emissions were calculated using emission factors from the NC Natural Gas Combustion Emissions Calculator (Revision N 01/05/2017):

Criteria Pollutant	**Emission Factor (lb/MMBtu)**	**Annual actual emissions (ton/yr)**	**Annual potential emissions (ton/yr)**
Particulate matter (PM_{10})	0.001	0.001	0.02
Particulate matter ($PM_{2.5}$)	>0.0005	0.000	0.02
Sulfur dioxide (SO_2)	0.001	0.01	0.02
Nitrogen oxides (NO_X)	0.098	2.24	3.35
Carbon monoxide (CO)	0.082	1.88	2.98
Volatile Organic Compounds (VOC)	0.005	0.12	0.2

Using the aforementioned NC Natural Gas Combustion Emissions Calculator, 84.3 pounds of actual total hazardous air pollutants (HAP) would be emitted annually from the new boiler. HAP include ammonia, acrolein, acetaldehyde, benzene, benzo(a)pyrene, formaldehyde, naphthalene, toluene, and selenium, with hexane being the largest single HAP emitted (80.7 lb/yr). Potential annual HAP emissions of 133 pounds were calculated for the new boiler, with hexane again being the largest single HAP emitted (128 lb/yr). These quantities are well below the major source threshold for HAP.

The minor modification also includes installation of a compression molding press which is already allowed for in the current permit. The planned 1,000-ton compression molding press (ID No. 14, ES1C-10) would be smaller than the 2,850-ton press originally approved in their permit. Compression molding press emissions are calculated using the following formula:

$$\text{VOC Emissions (ton/yr)} = \text{Charge Wt (lb)} * \frac{\text{Press Cycles}}{\text{Hr}} * \text{Molding Compound Styrene Content (\%)} * \text{Emission Factor} * \frac{8600\ \text{hr}}{\text{yr}} * \frac{1\ \text{ton}}{2000\ \text{lb}}$$

Using a molding compound styrene content of 0.1355, a maximum of 20 press cycles per hour, and the emission factor for compression molding of parts using sheet molding compound (SMC), annual VOC emissions from Press 14 are shown below:

Charge Weight (lb)	Press Cycles/hr	Molding Compound Styrene Content	SMC Part Compression Molding Emission Factor (%)	Conversion factor, hours to years (hr/yr)	Conversion factor, pounds to tons (ton/lb)	Annual VOC emissions (ton/yr)
39.14 (max)	20	0.1355	0.015	8760	0.0005	6.97 (max)
11.97 (avg)	20	0.1355	0.015	8760	0.0005	0.97 (avg)

This press, like all presses operated at the facility, will be subject to Work Practices for Closed Molding, Cleaning, Storage, and BMC Manufacturing Operations (15A NCAC 02D .1111 [*40 CFR 63, Subpart WWWW*]. MFG is subject to permit conditions (15A NCAC 02Q .0317) that limit VOC emissions to less than 250 tons per year, thereby allowing it to avoid applicability of Prevention of Significant Deterioration requirements (15A NCAC 02D .0530)**.**

Finally, the minor modification includes installation of a 1.0 MMBtu/hr curing oven (ID No. I-Curing oven) to be added to the touchup booth (ID No. ES3) as an insignificant source in accordance with 15A NCAC 02Q .0503(8). Using the following equation, the maximum energy consumption rate for the oven is used to determine its maximum annual gas throughput.

Maximum Annual Natural Gas Throughput $= 1.0 \times 10^6$ Btu/hr $* \frac{8760 \text{ hr/yr}}{1020 \text{ Btu/ft}} = 8.59 \times 10^6$ ft^3/yr = 8.59 MMBtu/yr

The annual gas throughput is then multiplied by emission factors for regulated pollutants to calculate the potential to emit for each of the pollutants listed below. The quantities shown are small enough for the oven to be considered an insignificant source of air pollution accordance with 15A NCAC 02Q .0503(8).

Pollutant	AP-42 Emission Factor (lb/MMCF)	Maximum Annual Emissions (ton/yr)
NO_X	100	0.430
CO	84	0.36
PM_{10}	7.6	0.033
$PM_{2.5}$	5.7	0.025
SO_X	0.6	0.0026
VOC	5.5	0.024
Total HAP	0.00184	7.92×10^{-6}

6. Regulatory Review

The following operations at the facility must limit the rate of particulate matter emissions as specified in 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes, and limit visible emissions to less than 20 percent opacity in accordance with 15A NCAC 02D .0521, Control of Visible Emissions:

- Open molding and gel coat application

- Coating and painting operations
- Sanding/trimming/drilling/routing operations

Testing, monitoring, recordkeeping and reporting requirements for these operations shall be performed in accordance with 15A NCAC 02Q .0508(f). It should be noted, however, that the emission sources for open molding and gel coat application (ID Nos. ESIA and ES4) have been removed from the facility. No open molding operations have occurred at the facility since 2007.

The natural gas fired boilers at the facility are subject to the following regulations:

15A NCAC 02D .0503: Particulates from Fuel Burning Indirect Heat Exchangers – Particulate matter emission limits for natural gas combustion under this rule are determined based upon the sum of maximum heat input of all fuel burning indirect heat exchangers at a plant site which are in operation, under construction, or permitted. The equation called for is $E = 1.090Q^{-0.2594}$, where

E = allowable emission limit for particulate matter in lb/MMBtu.
Q = maximum heat input in million Btu/hour.

For the MFG facility, summing the heat inputs for the existing boiler (ID No. ESB1) and new boiler (ID No. ESB3),

Q = 3.35 MMBtu/hr + 8.26 MMBtu/hr = 11.61 MMBtu/hr

$E = 1.090 \times 11.61^{-0.2594} = 0.58$ lb/MMBtu

Existing boiler ESB1 is grandfathered under the rule, so its emission limit remains at 0.60 lb/MMBtu. New boiler ESB3 will have an emission limit of 0.58 lb/MMBtu.

Any emission testing required will comply with General Condition JJ in 15A NCAC 02Q 0508(f). No monitoring, recordkeeping, or reporting are required for particulate emissions from the firing of natural gas for the boiler.

15A NCAC 02D .0516: Sulfur Dioxide Emissions from Combustion Sources – Emissions of sulfur dioxide from the boiler shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Any emission testing required will comply with General Condition JJ in 15A NCAC 02Q 0508(f). No monitoring, recordkeeping, or reporting are required for sulfur dioxide emissions from the firing of natural gas for the boiler.

15A NCAC 02D .0521: Control of Visible Emissions – Visible emissions from the boiler must not exceed 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Any emission testing required will comply with General Condition JJ in 15A NCAC 02Q 0508(f). No monitoring, recordkeeping, or reporting are required for visible emissions from the firing of natural gas for the boiler.

7. NSPS, PSD, CAM, and 112(r)

a. NSPS

New Source Performance Standards (NSPS) are not applicable to this facility. This permit renewal with consolidated minor modification does not affect this status.

b. PSD

This facility has a potential to emit greater than 250 tons per year of VOC. However, to avoid applicability of 15A NCAC 02D .0530 "Prevention of Significant Deterioration", the facility previously accepted an enforceable permit condition pursuant to 15A NCAC 02Q .0317 that limits VOC emissions to less than 250 tons per consecutive 12-month period. The condition applies to closed compression molding and coating/painting operations at the facility. The permit prescribes a methodology for determining total facility VOC emissions each month, and recordkeeping and reporting requirements to document VOC emissions from facility operations. This permit renewal with consolidated minor modification does not affect this status. Continued compliance is expected.

c. CAM

40 CFR Part 64 establishes requirements for compliance assurance monitoring (CAM). This rule applies to any pollutant specific unit that meets the following three conditions:

- the unit is subject to any (non-exempt: e.g. pre-November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the pre-control potential emission rate for the unit exceeds either 100 tons per year for criteria pollutants, 10 tons per year of a single HAP, or 25 tons per year of multiple HAPs.

CAM was determined in a preceding permit review to be inapplicable because potential pre-controlled emissions (particulate) were less than CAM thresholds. The permit renewal with consolidated minor modification does not affect the facility's status with respect to compliance assurance monitoring (CAM).

d. CAA 112(r)

This facility does not appear to be subject to the requirements of the Risk Management Program under section 112(r) of the Clean Air Act. This permit renewal with consolidated minor modification does not affect this status.

8. Facility-wide Air Toxics/MACT

The facility has not triggered an air toxics review. This permit renewal with consolidated minor modification does not affect this status.

The new boiler (ESB3, 8.26 MMBtu/hr) will be subject to 15A NCAC 02D .1111: Maximum Achievable Control Technology (MACT) – 40 CFR 63, Subpart DDDDD upon installation. The existing natural gas-fired boiler (ID No. ESB1, 3.35 million Btu/hr) the existing boiler will be subject to 15A NCAC 02D .1109, Case-by-Cas MACT for Boilers and Process Heaters until May 20, 2019. On that date, the existing

boiler will become subject to Subpart DDDDD, including a one-time energy assessment which incorporates all of the elements listed in item 4, Table 3 of Subpart DDDDD.

The planned 1,000-ton compression molding press (ID No. 14, ES1C-10) is subject to 15A NCAC 02D .1111: Maximum Achievable Control Technology – 40 CFR Part 63, Subpart WWWW; Reinforced Plastic Composites Production. This subpart prescribes work practice, recordkeeping, and reporting standards for closed and compression molding.

The new 1.0 MMBtu/hr curing oven (ID No. I-Curing oven) is subject to MACT regulation subpart DDDDD. However, as mentioned earlier, the oven is an insignificant source in accordance with 15A NCAC 02Q .0503(8).

The facility is also subject to Subpart PPPP, which regulates HAP emissions from coating and painting operations.

9. Facility Compliance Status

The facility was issued an Notice of Deficiency on May 20, 2016 for missing monthly visible emissions observations. The facility was issued an Notice of Violation on April 13, 2017 for late submittal of the Annual Title V Compliance Certification.

The MFG facility was last inspected on February 14, 2018 by Patrick Ballard of the Asheville Regional Office. The company appeared to be in compliance with all applicable requirements at that time.

The inspector noted in his report that rule 15A NCAC 02D .0902 (e) and (f) as amended November 1, 2016 has changed the applicability of rule 15A NCAC 02D .0958: Work Practices for Sources of Volatile Organic Compounds such that it now only applies to ozone non-attainment areas. Burke County, where MFG is located, is in attainment with the ozone standards. The inspector recommended that the work practices required by 15A NCAC 02D .0958 be removed the next time the permit is opened. This requirement has been removed.

10. Public Notice/EPA and Affected State Review

A notice of the DRAFT Title V Permit will be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice will be sent (via email) to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit (via email) and each final permit shall be provided to EPA. Pursuant to 15A NCAC 02Q .0522, a notice of the DRAFT Title V Permit will be provided (via email) to each affected State at or before the time notice provided to the public under 15A NCAC 02Q .0521 above. Pursuant to 15A NCAC 02Q .0518, the DAQ will not issue the final permit until EPA's 45-day review period has expired or until EPA has notified the Director that EPA will not object to issuance of the permit revision, whichever occurs first.

11. Other Regulatory Considerations

Neither a P.E. seal nor a zoning consistency determination were required for this permit renewal with consolidated minor modification.

A permit fee of $947 was required and submitted with Permit Application No. 1200094.18A.

12. Recommendations

This permit renewal and minor modification applications for Molded Fiber Glass Companies North Carolina, Burke, North Carolina have been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 06218T18.